

## IN THE CLAIMS

The pending claims are as follows:

### Listing of Claims

1. (Previously Presented) A radio communication management method in a radio communication system which manages link connection of a mobile terminal using HMIPv6, wherein the mobile terminal transmits information on authentication for accessing a desired network together with first information for changing the link connection with respect to a server which manages the link connection of the mobile terminal to reduce a time required for changing the link connection of the mobile terminal,

wherein the server which manages the link connection acquires an authentication result by an authentication process using the information on the authentication, and

wherein the server which manages the link connection, after receiving the first information, sets a predetermined tentative permission time for which the mobile terminal tentatively permits an access to the desired network, and transmits, to the mobile terminal, information notifying the permission of the access to the desired network only for the predetermined tentative permission time together with the information notifying that the change of the link connection of the mobile terminal has been confirmed, and then the server which manages the link connection sets a time until acquiring the authentication result, and transmits the authentication result to the mobile terminal together with information notifying that the change of the link connection of the mobile terminal has been confirmed, when next receiving

second information for changing the link connection from the mobile terminal in a case where the authentication result is capable of being acquired within the time until acquiring the authentication result.

2. (Previously Presented) The radio communication management method according to claim 1, wherein the mobile terminal transmits the first information for changing the link connection and the information on the authentication as one piece of information, and the server which manages the link connection acquires each of the first information for changing the link connection and the information on the authentication from the one piece of information.

3. (Canceled).

4. (Previously Presented) The radio communication management method according to claim 1, wherein the server which manages the link connection communicates with an authentication server which authenticates the mobile terminal to acquire the authentication result.

5. (Previously Presented) The radio communication management method according to claim 1, comprising the step of: transmitting the information notifying that the change of the link connection of the mobile terminal has been confirmed and the authentication result as one piece of information to the mobile terminal.

6-8. (Canceled).

9. (Previously Presented) The radio communication management method according to claim 1, wherein the server which manages the link connection sets a predetermined permission time which is longer than the predetermined tentative permission time and for which the mobile terminal permits the access to the desired network, and transmits, to the mobile terminal, the information notifying the permission of the access to the desired network only for the predetermined permission time together with the information notifying that the change of the link connection of the mobile terminal has been confirmed in a case where the authentication result indicates authentication success.

10. (Previously Presented) The radio communication management method according to claim 1, wherein the server which manages the link connection performs registration relating to the change of the link connection of the mobile terminal which has permitted the access to the desired network for the predetermined tentative permission time or only for a predetermined permission time, and deletes the registration relating to the change of the link connection of the mobile terminal in a case where the predetermined tentative permission time or the predetermined permission time has elapsed.

11. (Canceled).

12. (Previously Presented) The radio communication management method according to claim 5, wherein the server which manages the link connection sets a predetermined connection prohibition time with respect to the mobile terminal, and does not perform a process relating to the change of the link connection of the mobile terminal which has failed in the authentication and a process relating to the authentication for the predetermined connection prohibition time after notification of authentication failure in a case where the authentication failure is notified as the authentication result with respect to the mobile terminal.

13. (Previously Presented) The radio communication management method according to claim 5, wherein the server which manages the link connection performs registration relating to the change of the link connection of the mobile terminal which has succeeded in the authentication only in a case where authentication success is notified as the authentication result with respect to the mobile terminal.

14. (Previously Presented) A radio communication management method in a radio communication system which manages link connection of a mobile terminal,

wherein the mobile terminal transmits information on authentication for accessing a desired network together with information for changing the link connection with respect to a server which manages the link connection of the mobile terminal,

the server which manages the link connection, after receiving the information for changing the link connection, sets a predetermined tentative permission time for which the mobile terminal tentatively permits an access to the desired network, and transmits, to the mobile terminal, information notifying the permission of the access to the desired network only for the predetermined tentative permission time, and

the server which manages the link connection sets a time until acquiring an authentication result by an authentication process using the information on the authentication, and transmits the authentication result to the mobile terminal in a case where the authentication result is capable of being acquired within the time until acquiring the authentication result.

15. (Canceled).

16. (Previously Presented) The radio communication management method according to claim 14, wherein the server which manages the link connection sets a predetermined permission time which is longer than the predetermined tentative permission time and for which the mobile terminal permits the access to the desired network, and transmits, to the mobile terminal, the information notifying the permission of the access to the desired network only for the predetermined permission time in a case where the authentication result indicates authentication success.

17. (Previously Presented) The radio communication management method according to claim 14, wherein the server which manages the link connection cuts the connection of the

mobile terminal in a case where the predetermined tentative permission time or a predetermined permission time has elapsed.

18. (Canceled).

19. (Previously Presented) The radio communication management method according to claim 14, wherein the server which manages the link connection sets a predetermined connection prohibition time with respect to the mobile terminal, and does not perform a process relating to the mobile terminal which has failed in the authentication only for the predetermined connection prohibition time after notification of the authentication failure in a case where the authentication failure is notified as the authentication result with respect to the mobile terminal.

20. (Original) The radio communication management method according to claim 14, wherein the server which manages the link connection performs registration relating to the change of the link connection of the mobile terminal which has succeeded in the authentication only in a case where authentication success is notified as the authentication result with respect to the mobile terminal.

21-39. (Canceled).

40. (Previously Presented) The radio communication management method according to claim 1, wherein the server which manages the link connection sets a predetermined connection

prohibition time with respect to the mobile terminal, and does not perform a process relating to the change of the link connection of the mobile terminal which has failed in the authentication and a process relating to the authentication for the predetermined connection prohibition time after notification of authentication failure in a case where the authentication failure is notified as the authentication result with respect to the mobile terminal.

41. (Previously Presented) The radio communication management method according to claim 1, wherein the server which manages the link connection performs registration relating to the change of the link connection of the mobile terminal which has succeeded in the authentication only in a case where authentication success is notified as the authentication result with respect to the mobile terminal.

42. (Canceled).

43. (Previously Presented) A radio communication management server which manages link connection of a mobile terminal using HMIPv6, constituted to receive, from the mobile terminal, first information for changing the link connection and information on authentication for accessing a desired network as one piece of information, and acquire each of the first information for changing the link connection and the information on the authentication from the one piece of information and to acquire an authentication result by an authentication process using the information on the authentication, comprising:

a first time setting section that sets a time until acquiring the authentication result, and

a second time setting section that sets a predetermined tentative permission time to tentatively permit an access to the desired network with respect to the mobile terminal,

the radio communication management server further constituted to, after receiving the first information, transmit, to the mobile terminal, information notifying the permission of the access to the desired network only for the predetermined tentative permission time together with the information notifying that the change of the link connection of the mobile terminal has been confirmed, and then to transmit the authentication result to the mobile terminal together with information notifying that the change of the link connection of the mobile terminal has been confirmed, when next receiving second information for changing the link connection from the mobile terminal in a case where the authentication result is capable of being acquired within the time until acquiring the authentication result.

44. (Previously Presented) The radio communication management server according to claim 43, further comprising a unit which communicates with an authentication server which authenticates the mobile terminal to acquire the authentication result.

45. (Previously Presented) The radio communication management server according to claim 43, constituted to transmit, to the mobile terminal, the information notifying that the change of the link connection of the mobile terminal has been confirmed and the authentication result as one piece of information.



46. (Previously Presented) The radio communication management server according to claim 43, further comprising a third time setting section that sets, with respect to the mobile terminal, a predetermined permission time which is longer than the predetermined tentative permission time and for which the mobile terminal permits the access to the desired network,

the radio communication management server further constituted to transmit, to the mobile terminal, the information notifying the permission of the access to the desired network only for the predetermined permission time together with the information notifying that the change of the link connection of the mobile terminal has been confirmed in a case where the authentication result indicates authentication success.

47. (Previously Presented) The radio communication management server according to claim 43, further comprising:

an information registration unit which performs registration relating to the change of the link connection of the mobile terminal which has permitted the access to the desired network for the predetermined tentative permission time or only for a predetermined permission time; and

an information deletion unit which deletes the registration relating to the change of the link connection of the mobile terminal in a case where the predetermined tentative permission time or the predetermined permission time has elapsed.

48. (Previously Presented) The radio communication management server according to claim 43, further comprising:

a prohibition time setting unit which sets a predetermined connection prohibition time with respect to the mobile terminal; and

a prohibition control unit which controls to prevent a process relating to the change of the link connection of the mobile terminal which has failed in the authentication and a process relating to the authentication from being performed for the predetermined connection prohibition time after notification of authentication failure in a case where the authentication failure is notified as the authentication result with respect to the mobile terminal.

49. (Previously Presented) The radio communication management server according to claim 43, further comprising a registration control unit which controls to perform registration relating to the change of the link connection of the mobile terminal which has succeeded in the authentication only in a case where authentication success is notified as the authentication result with respect to the mobile terminal.

50. (Previously Presented) A radio communication management server which manages link connection of a mobile terminal, comprising:

a receiving unit which receives information on authentication for accessing a desired network together with information for changing the link connection from the mobile terminal,

a first time setting unit which, after receiving the information for changing the link connection, sets a time until acquiring an authentication result by an authentication process using the information on the authentication,

a first transmitting unit which transmits, to the mobile terminal, the authentication result to the mobile terminal in a case where the authentication result is capable of being acquired within the time until acquiring the authentication result,

a second time setting unit which, after receiving the information for changing the link connection, sets a predetermined tentative permission time for which the mobile terminal tentatively permits an access to the desired network, and

a second transmitting unit which transmits, to the mobile terminal, information notifying the permission of the access to the desired network only for the predetermined tentative permission time.

51. (Previously Presented) The radio communication management server according to claim 50, further comprising:

a third time setting unit which sets a predetermined permission time which is longer than the predetermined tentative permission time, and

a third transmitting unit which transmits, to the mobile terminal, the information notifying the permission of the access to the desired network only for the predetermined permission time in a case where the authentication result indicates authentication success.

52. (Previously Presented) The radio communication management server according to claim 51, further comprising a control unit which cuts the connection of the mobile terminal in a case where the predetermined tentative permission time or the predetermined permission time has elapsed.

53. (Previously Presented) The radio communication management server according to claim 50, further comprising:

a prohibition time setting unit which sets a predetermined connection prohibition time with respect to the mobile terminal; and

a prohibition control unit which controls to prevent a process relating to the mobile terminal which has failed in the authentication from being performed only for the predetermined connection prohibition time after notification of authentication failure in a case where the authentication failure is notified as the authentication result with respect to the mobile terminal.

54. (Previously Presented) The radio communication management server according to claim 50, further comprising a registration control unit which controls to perform registration relating to the change of the link connection of the mobile terminal which has succeeded in the authentication only in a case where authentication success is notified as the authentication result with respect to the mobile terminal.